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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,189	12/05/2003	Andrew Zador	57688.010002	2144

7590 04/03/2008  
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EXAMINER
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BEMBEN, RICHARD M

ART UNIT	PAPER NUMBER
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2622

MAIL DATE	DELIVERY MODE
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04/03/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/730,189	<b>Applicant(s)</b> ZADOR, ANDREW	
	<b>Examiner</b> RICHARD M. BEMBEN	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003 and 29 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,16,18 and 19 is/are rejected.
- 7) ☐ Claim(s) 2,6-12,14,15,17 and 20-26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/29/04</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Canada on June 6, 2001. It is noted, however, that applicant has not filed a certified copy of the June 6, 2001 application as required by 35 U.S.C. 119(b).

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show swept-frequency sinusoidal chirp **22**, secondary array **24** of opponent center/surround detectors **26**, swept-frequency sinusoidal chirp **104** as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top

margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. The specification does not adequately disclose many features necessary to the invention, e.g. "oscillation means", it is unclear what the oscillation means is (is it a lens? prism? filter? any of these?) and how it is oscillated by the sinusoidal chirp (is it connected to an actuator?), what is "filter 20" (part of image detector? a separate component?), etc.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**5. Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by "Aliasing reduction in staring infrared imagers utilizing subpixel techniques" by Joseph C. Gillette et al.**

Regarding **claim 1**, Gillette discloses an image processor comprising: an image detector for producing an image signal from an image received thereat (Introduction, section 1, col. 1, "fixed two-dimensional detector array"); oscillation means coupled to the image detector for inducing a spatial oscillation in the image relative to the image detector (Introduction, section 1, col. 1-2, "microscanning"; also see Microscanning Theory, section 3); and a spatio-temporally matching filter in communication with the image detector and the oscillation means for providing enhanced image processing of the image, the matching filter being configured to filter out aspects of the image signal not associated with the induced oscillation (Block Matching, section 3.2.1).

**Claim 16** is a method claim corresponding to apparatus claim 1. Therefore, claim 16 is analyzed and rejected as discussed with respect to claim 1.

***Claim Rejections - 35 USC § 103***

**6.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**7. Claims 3-5, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillette in view of U.S. Patent No. 6,912,307 issued to Spitzer et al., hereinafter "Spitzer".**

Regarding **claim 3**, Gillette discloses the limitations of claim 1, however fails to disclose that the image detector comprises a primary detector array having detector elements for receiving the image, and a secondary detector array coupled to the primary detector array, the secondary detector array being configured to extract differential image information from the image.

Spitzer discloses an image detector that comprises a primary detector array having detector elements for receiving the image, and a secondary detector array coupled to the primary detector array, the secondary detector array being configured to extract differential image information from the image (refer to c. 5, l. 19 - c. 7, l. 14, Figures 2-3 and c. 8, ll. 1-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the detector disclosed by Spitzer in the staring imaging system disclosed by Gillette in order to process color pictures in a manner similar to that in which the neurons of the visual system process signals related to color vision.

Regarding **claim 4**, refer to the rejection of claim 3 and Spitzer further discloses that the secondary detector array comprises a plurality of secondary detectors, the secondary detectors being grouped by spatial orientation of the detector elements (refer to c. 5, l. 19 - c. 7, l. 14, Figures 2-3).

Regarding **claim 5**, refer to the rejection of claim 4 and Spitzer further discloses that the secondary detectors comprise opponent center/surround detectors, a central detector of each said opponent center/surround detector being configured to receive a signal input from one of the detector elements, and a surround detector of each said opponent center/surround detector being configured to receive a signal input of opposing polarity from an adjacent one of the detector elements (refer to c. 5, l. 19 - c. 7, l. 14, Figures 2-3).

**Claims 18** is a method claim corresponding to apparatus claims 3. Therefore, claim 18 is analyzed and rejected as previously discussed with respect to claims 3.

Regarding **Claim 19**, refer to the rejection of claim 4 and Spitzer further discloses extracting enhanced contrast information from the image signal (c. 1, l. 53 - c. 2, l. 44).

### ***Allowable Subject Matter***

8. Claims 2, 6-12, 14, 15, 17 and 20-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 7,173,662 issued to Barbastathis et al. discloses a "foveated" imaging system wherein the image sensor is designed to function like the human eye.

U.S. Patent No. 5,991,456 issued to Rahman et al. discloses a method of improving a digital image so that the image appears similar to what is perceived by human vision in all kinds and levels of lighting across the entire scene. Rahman et al. further disclose "Center/Surround Retinex".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD M. BEMBEN whose telephone number is (571)272-7634. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RMB

/Nhan T. Tran/

Primary Examiner, Art Unit 2622



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